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By
Alvin Scodel
The Ohio State University

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Psychological Monographs: General and Applied

Passivity in a Class of Peptic Ulcer Patients[1]

Alvin Scodel
The Ohio State University

I. THE PROBLEM

THIS STUDY is an attempt to determine whether ulcer patients in psychotherapy exhibit personality trends measurably different from those of neurotic patients in psychotherapy. The research was suggested by previous reports in which ulcer patients, in contrast to normals or other psychosomatic patients, were said to have a specific psychological conflict or to comprise a special personality type (1, 7). An even more crucial problem, however, is whether the personality trends noted in the psychological investigations of ulcer patients are peculiar to them or characterize neurotic patients in general. If the latter situation obtains, there is little justification for speaking of an ulcer personality type or even a particular conflict in ulcer patients. It would be sufficient to label them as "neurotic." For example, a conflict over dependency needs is often described as the distinguishing feature of ulcer patients. Yet, if the same conflict is present to the same degree in neurotic patients, it obviously has no uniqueness for the ulcer group.

The present study concerns itself with a comparison of ulcer and neurotic patients in psychotherapy at a Veterans Administration mental hygiene clinic. Although it was not entirely possible to equate the groups for severity of psychopathology, a general factor of neuroticism in both groups was obtained by selecting patients on the basis of voluntary admission into psychotherapy. The ulcer sample is hypothesized to be within that group designated as "attitudinally counteractive and overtly passive," and is described in the next section.

[1] This monograph is based on a thesis submitted to the University of California in partial fulfillment of the degree of Doctor of Philosophy. It has been reviewed by the responsible officers of the Veterans Administration and is published with their approval. The opinions and conclusions are the writer's and do not necessarily reflect the opinion or policy of the Veterans Administration.

The writer wishes to express his indebtedness to Drs. Robert E. Harris, Audrey Schumacher, and Robert C. Tryon for their invaluable criticisms and suggestions during the planning and execution of this study. Special thanks are due to Dr. Jack Block and Mr. Dean Allen for their cooperation and encouragement throughout the duration of the study.

The writer is also grateful to staff members of the San Francisco Mental Hygiene Clinic for so graciously referring their patients to serve as subjects and to the patients themselves, who, in many instances, gave up several hours from their employment to participate in the study.

II. THE ULCER PATIENT SYNDROME[2]

The writer hypothesizes an active-passive dichotomy in male ulcer patients and assigns a different etiological basis to each group. The active group would be selected from an upper-middle or upper class background where emphasis is placed on that kind of behavior which insures success in our culture. This group may be tentatively described as "attitudi-

[2] A review of the literature containing previous theoretical discussions of the ulcer patient syndrome and a detailed elaboration of the writer's views have been given elsewhere (8).

nally counteractive and overtly active." These patients refuse to accept their dependency needs, and their actual behavior is in conformity with their perception of themselves as active, efficient, and masculine. However, ego aspirations are set so high that the individual can never achieve them. He is forever falling short and his futile attempts at mastery serve only to increase his unconscious dependency needs.

The passive group is derived from a lower or lower-middle class background which fosters and encourages satisfaction with nonstriving occupational pursuits. This group, assumed to include the ulcer sample in the present research, may be labelled "attitudinally counteractive and overtly passive." These ulcer patients, like those in the active group, also deny their dependence, but their overt behavior is inhibited, conforming, and unassertive in contrast to their perception of themselves as active and productive persons. Such a self-evaluation serves as a defense against the culturally unacceptable dependency needs, and as long as the individual is able to obtain need gratification, the pretext of independent masculinity is maintained without any appreciable threat to the self. The individual's culturally approved perception of himself as masculine can remain inviolate while repressed passive and feminine needs are being gratified by an external source. Once the source of dependency is removed, however, repression is no longer an adequate defense. The environmentally induced frustration brings the dependence-independence conflict into focus since the conscious perception of self is directly attacked by reality. The person is faced with the impossible task of performing as if he were independent. His conscious phantasy of being efficient and masculine loses validity in the face of a self-imposed inability to act independently, on the one hand, and an environment which frustrates dependency, on the other. This insoluble situation increases the unconscious longing for dependence which, being incompatible with conscious perception, sets in operation those physiological processes that produce the ulcer.

III. SUBJECTS

A total of 72 subjects, all male, was used in the present study. Subjects were selected from the patient population of the San Francisco Mental Hygiene Clinic. There were 38 patients in the control group and 34 patients in the ulcer group. However, not all patients completed the battery of measures used in the study. Completion of the entire battery would ordinarily entail more than one session, and many patients would drop out of treatment, permanently or temporarily, before the battery could be completed.

A. *Diagnosis.* All patients in the ulcer group had a medical diagnosis of an ulcer which had been confirmed by X-ray studies. However, for inclusion in the study it was not required that the ulcer be active at the time the patient was seen for the study. Patients were included if their Veterans Administration records indicated that they had had an active ulcer which had been substantiated by X-ray diagnosis at any time within the five previous years. This criterion was designed to exclude any diagnoses which had been made prior to their entry into the service. In such cases no records were available, and the validity of the diagnosis would have had to rest on the personal testimony of the patient. The records listed all the cases but two as duodenal ulcer. The remaining two were diagnosed as gastric ulcer.

The control group was spread over a wide range of nosological categories. The diagnoses included anxiety states, conversion hysteria, and obsessional neuroses. Other cases were given less definitive diagnoses such as "dependency

reaction" or "somatization reaction." Patients were not included in the control group if they carried a psychosomatic diagnosis or had reported in the intake interview a history of a psychosomatic illness. "Nonpsychosomatic" was defined as the absence, both at the time of testing and in the patient's history, of the following diseases: peptic ulcer, asthma, ulcerative colitis, rheumatoid arthritis, essential hypertension, and neurodermatitis. In view of Wolf and Wolff's assertion that an ulcer and other stomach complaints differ only in degree (11), patients with stomach complaints were also excluded from the control group. Patients were accepted if they had illnesses other than those just listed or if they had physical complaints of functional origin other than stomach complaints.

B. *Severity of psychopathology.* No patients in either the ulcer or control group displayed psychotic behavior at the time they were seen. The exclusion of a psychotic diagnosis was based on the provisional diagnosis obtained from the intake psychiatric interview or, if the patient was already in therapy at the time the study was initiated, from the patient's therapist.

C. *Length of time in psychotherapy.* Nineteen members of the ulcer group, or 56 per cent, and 17 members of the control group, or 45 per cent, were seen within the first month after they had gone through intake. The remaining patients had already been in therapy for a longer period at the time they were seen.

D. *Ethnic origin.* There were two Negroes in each group. The ulcer group contained three foreign-born patients (two Europeans, one South American), and the control group had two patients of European birth. The remaining 63 patients were native-born whites.

E. *Intelligence.* The vocabulary subtest of the Wechsler-Bellevue Intelligence Scale was administered to all 72 patients. In view of the correlation of .85 of this subtest with the total scale (10, p. 101), it was selected as an expedient measure of the patients' intellectual level. The means of the weighted scores were 12.4 for the ulcer group and 12.8 for the control group. This difference was not significant.

F. *Age.* The age range in the ulcer group was 23 to 50 years with a mean age of 35.4. In the control group the ages ranged from 23 to 53 years with a mean age of 31.2. Although the difference in mean age was significant at the .01 level, correlations between age and performance on each of the experimental measures were not significant.

G. *Socioeconomic status.* Although the lack of detailed information on many patients precluded a comparison of the socioeconomic background of the two groups, it can safely be stated that the majority of patients were of either upper-lower or lower-middle class membership. A study of consecutive admissions of San Francisco Mental Hygiene Clinic patients, undertaken one year before the present study was initiated, revealed that only 7 per cent of the patients entering therapy could be classified as having professional, managerial, or entrepreneurial status. It is principally for this reason that ulcer patients in the present sample are assumed to be in the passive rather than the active group. There is the additional reason that voluntary acceptance of psychotherapy in the Veterans Administration presupposes some degree of overt passivity. Payment is not required as it is in ordinary psychiatric practice, where the willingness to pay a fee is presumptive evidence that the patient feels motivated to change his status. Moreover, many of these patients are referred from other departments in the Veterans Administration or from public agencies, so that entrance into therapy is often a passive compliance with the suggestions of persons in authority.

IV. PROCEDURES

Three experiments were utilized, each designed to elicit different manifestations of overt passivity.

A. *Level-of-aspiration experiment.* The pursuit rotor was selected as the apparatus to be used in studying the patients' level of aspiration because it appeared to satisfy those criteria which have been described by most investigators as necessary for a good level-of-aspiration experiment. The pursuit rotor consists of an electrically driven turntable which is attached to an electrical clock. On the turntable there is a small brass disc. A brass stylus is also attached to the apparatus. Whenever the brass stylus makes contact with the disc, the length of time in which the two are in contact is recorded on the clock. The turntable can be adjusted to rotate at varying speeds. In the present experiment it rotated at a speed of 65 revolutions per minute.

Each patient was given a half-minute's practice on the apparatus, and the timing device was also explained to him. The patient was instructed to keep the stylus in contact with the disc as much as he could during each 20-second trial. Before each trial he was asked to predict his performance. At the conclusion of a trial he was told what his performance was, and was then asked to predict his next per-

formance. This procedure was continued for a total of 11 trials, the first of which was ignored in the analysis of the data.

B. *Experiment on completed versus interrupted tasks.* The experimental material consisted of 16 pencil-and-paper tasks. These were selected for their general interest value and could be solved accurately by all subjects of average or better than average intelligence without being so easy as to destroy motivation. The problems included such tasks as working out a simple code, writing a paragraph backwards, selecting appropriate conclusions for logical syllogisms, rearranging jumbled sentences, etc. Before the experiment began, the experimenter said, "I am going to give you a series of tasks. I want you to do each one as quickly and accurately as you can." No other preliminary instructions were given. The patient was allowed to complete half of the tasks and was interrupted on the others when he was about three-quarters finished. If he was spending a disproportionate amount of time on the task, he was interrupted sooner because it seemed desirable to equate the lengths of time for the various tasks as much as possible. In the event that a patient was experiencing difficulty with a task which was to be completed, the experimenter removed the paper from him, and it was counted as unfinished. He was then allowed to complete the next task which was to have been interrupted.

Although the order of completion and interruption was constant, the order of presentation of the tasks was randomized for each patient. Torrey (9) has found that tasks which form a good Gestalt in the sense that a definite pattern has to be followed are recalled more readily after interruption than those tasks which can be broken down into discrete units. Since the tasks used in the present experiment varied greatly with respect to whether they were or were not good Gestalten, any bias which operated in favor of the recall of certain tasks was removed by randomization.

Recall was instituted three minutes after completion of the last task. During this time the experimenter pretended to write notes. At the end of three minutes the experimenter looked up and asked, as casually as possible, "I wonder if you would tell me what these problems were that you just worked on." The experimenter then recorded all those tasks that the patient enumerated. This procedure continued until a one-minute interval was reached which produced no responses. At no time did the experimenter imply that recall of the tasks was of any importance.

C. *Experiment on perseveration of inadequate hypotheses.* The procedure in this experiment was substantially the same as that used by Humphreys (4) in a study of the effects of the distribution of reinforcement upon the acquisition and extinction of conditioned responses. The apparatus consisted of two light bulbs juxtaposed on a vertical board. Behind the board were switches for each of the light bulbs. The experimenter sat behind the board and manipulated the switches. His movements were not observed by the patient who sat facing the board.

The following instructions were given to the patient:

"On each trial the light on your left will be turned on. Following that light, I may or may not turn on the light on your right. After I turn on the light on your left, and you think I am going to turn on the light on your right, put down an X after the number of the trial. If you think I am not going to turn on the light on your right, put down an O. After I turn on the light on your left, you will be given only a few seconds to make your choice so don't hesitate in writing down the X or O. However, do your best to catch on to the plan which I am going to follow."

The patient was then given 24 trials. On 12 of these trials the right light followed the left light. The right light was turned on in a random fashion so that the problem was actually insoluble. Following the twenty-fourth trial and without any break in the continuity of the presentations, the second light was never turned on. This procedure was continued until the patient had marked down 10 consecutive O's. This was the criterion for solution of the problem.

Despite the insolubility of the problem, the manner of presentation demonstrated to each patient that sometimes the second light went on and sometimes it did not. Some patients may have been operating on an erroneous hypothesis regarding the sequence of the reinforcements, others may have been following no specific hypothesis or hypotheses, but all patients can be said to have known that the second light came on periodically, if not in any systematic fashion.

D. *The Minnesota Multiphasic Personality Inventory (MMPI).* The present group of ulcer patients in psychotherapy was said to be attitudinally counteractive and overtly passive. For the most part, these patients perceive themselves as active, masculine, and efficient, despite their overtly passive behavior. The study of Ruesch and his associates (7) elicited clinical evidence suggesting that most ulcer patients' attitudes are characterized by extreme social conformity, a reluctance to express aggression openly, and an exaggerated lower-middle class value system. In order to test these statements some measure of attitudes was necessary which

would reveal the discrepancy between the ulcer patient's actual behavior and his perception of himself. For this purpose the MMPI seemed ideally suited. The test provides both clinical scales and a large number of diverse items that are related to these predictions. For scoring and interpretation of the MMPI scales the reader is referred to the manual (3).

V. HYPOTHESES AND RESULTS

A. *Level-of-aspiration experiment.* This experiment assumes that a passive person will reveal his lack of mastery over his environment by setting low goals for himself in a situation where he is allowed a freedom of choice. A person may profess to be entirely self-confident and unafraid of failure, but in a situation which allows a freedom of choice in selecting goals, he may evade the possibility of failure by restricting himself to minimal achievements.

The patient's atypical responses on the pursuit rotor were used as a measure of his level of aspiration. Atypical responses included the following four kinds of responses:

1. Raising one's aspiration level after failure.
2. Maintaining one's aspiration level after failure.
3. Lowering one's aspiration level after success.
4. Maintaining one's aspiration level after success.

The sum of the first and second types of response comprised the patient's "high" responses, and of the third and fourth his "low" responses. The patient's level-of-aspiration score was obtained by algebraically summing the number of his high and low responses. For example, if he had three high responses and one low response, he received a score of 2; if he had one high response and two low responses, his score would be −1.

The hypothesis in this experiment was that the ulcer group would have a lower level of aspiration than the control group when the level of aspiration was measured by the difference between the number of atypical high responses and the number of atypical low responses.

Statistical comparison of the ulcer group ($N = 33$, Mean = .67, $SD = 2.61$) and the control group ($N = 36$, Mean = 1.81, $SD = 3.04$) yielded a t of 1.66, which is significant at the .05 level of confidence.[3]

The mean number of atypical responses for the two groups was almost identical. For the ulcer group the mean number was 3.70 and for the control group it was 3.65.

B. *Experiment on memory for completed versus interrupted tasks.* The rationale for this experiment was based on the assumption that, in Rosenzweig's terms (6), the ulcer patient in psychotherapy would be ego defensive rather than need persistive. Ego defensiveness, as such, cannot be equated with passivity, but the ego-defensive person manifests a low tolerance for failure by ignoring or rejecting his failures. The more active or need-persistive person attempts to overcome failure. In this somewhat derivative sense the ulcer patient's behavior in this experiment is construed as another manifestation of his overt passivity.

The present experiment takes as its starting point the same kind of informal (nonstressful) situation used by Zeigarnik (12), but makes an opposite prediction on the basis that a low tolerance for failure in ulcer patients would produce a greater recall of completed tasks. Since passivity also characterizes patients in the control group, the normal Zeigarnik

[3] In view of the specific predictions, a one-tailed test of significance was used for comparisons of the groups.

effect cannot be expected to hold for many patients in this group. The hypothesis in this experiment, therefore, is that the reversal of the Zeigarnik effect will be more true of the ulcer than of the control group. There is an explicit assumption that if normals were tested in the same situation, selective recall would operate in favor of the incompleted tasks. Rosenzweig's experiment, as well as the original Zeigarnik study, can be cited as supporting evidence for this assumption.

The procedure used to test the prediction that the recall of completed tasks would be greater for the ulcer group employed recall differences in which the number of interrupted tasks recalled by each patient was subtracted from the number of completed tasks he had recalled. Statistical comparison of the ulcer group ($N = 29$, Mean = .97, $SD = 1.77$) and the control group ($N = 30$, Mean = $-.20$, $SD = 1.64$) yielded a t value of 2.60, which is significant at the .01 level of confidence.

Alternative statistical treatments, one employing the ratio of completed to interrupted tasks recalled, and the other the numbers of patients who recalled more completed or interrupted tasks, led to similar results.

The mean number of total tasks recalled was 8.4 for the ulcer group and 8.8 for the control group. This difference is not significant.

The writer prefers the term "selective recall" to repression in evaluating the results. Repression in the Freudian sense is usually construed to mean the purposeful exclusion of instinctual demands from awareness (2, p.148). The present experiment was intended only to test the low tolerance for failure in ulcer patients.

C. *Experiment on perseveration of inadequate hypotheses.* This experiment was designed to measure manifestations of overt passivity in a problem-solving situation. The experiment rests on two assumptions. The first assumption is that one of the correlates of passivity should be a delay in adapting to a sudden change in the external situation. This assumption led to the following hypothesis for the Humphreys problem: Given a situation in which set is firmly established and given an objective change in the external situation which makes the initial set no longer applicable, the ulcer group will perseverate longer on the initial set than the control group. Stated another way, the ulcer group will perseverate longer on an inadequate hypothesis before restructuring the situation than will the control group.

The second assumption in this experiment is that the passive person will continue to give a response when that response is reinforced by being proved correct. The less passive person will cast about for alternative solutions even after he has given a correct response. The second hypothesis in this experiment, then, was as follows: When the initial hypothesis has been perceived as incorrect and a new kind of response has been initiated which is applicable to the new situation, the ulcer group will maintain the new response more persistently than the control group. It was predicted that the ulcer patients would restructure the situation later, but, after they had restructured the situation, would have fewer erroneous hypotheses than the control group. An erroneous hypothesis in this instance was meant to be an unnecessary alternate hypothesis, since a new response that was applicable to the new situation had already been established.

In reference to the first prediction, "restruc-

turing" was defined as a discernible change in the pattern of X's and O's following the twenty-fourth trial. In order to arrive at a measure of the point of restructuring the problem, the protocols were rated independently by five advanced graduate students in clinical psychology. Each rater was instructed to compare the pattern of the first 24 trials with the pattern of succeeding trials and to designate the number of the trial at which a definite transition appeared. Since a restructuring of the problem would often cover several or many trials, the raters were instructed to mark the change at the beginning of the transition. In this manner all raters employed the same criterion for change. A typical protocol will serve to clarify the rating procedure.

Trial Number:	1	2	3	4	5	6	7	8	9	10	11	12
Response:	X	O	X	X	O	O	X	X	X	O	X	O
	13	14	15	16	17	18	19	20	21	22	23	24
	X	X	O	O	O	X	X	O	X	O	X	X
	25	26	27	28	29	30	31	32	33	34	35	36
	O	X	O	O	X	X	X	X	X	X	X	O
	37	38	39	40	41	42	43	44	45			
	O	O	O	O	O	O	O	O	O			

All raters assigned this patient a score of 29. Some patients obtained scores of 25, 26, or 27 although 28 was the first trial at which a change could have logically occurred. In the first 24 trials the light was never turned on or kept off more than twice in succession. Therefore, it would take at least three trials after 24 to perceive that the external situation had been altered. Scores below 28 are artifacts produced by the rating method, but it was deemed desirable to insure uniformity in the method chosen to evaluate change.

The tetrachoric correlations among raters ranged from .80 to .95 with a median correlation of .89. The composite rating has an estimated reliability of .97, which is the expected correlation between the obtained ratings and the ratings of five comparable judges.

The median of the five raters' scores for each patient was taken to be the patient's actual score. The positive skewness of the distributions limited the use of the conventional *t* test. As an alternative procedure, the pooled distributions were dichotomized at their median, which was 31, and a subsequent test of significance by chi square was made. A fourfold table of the distributions is presented in Table 1.

TABLE 1

POINTS OF RESTRUCTURING FOR THE ULCER AND CONTROL GROUPS

Group	Below Median	At Median and Above Median	Total
Ulcer	11	22	33
Control	23	15	38
Total	34	37	71

The obtained chi square of 5.23 is significant at the .05 level of confidence.

The prediction that the ulcer group, after restructuring the problem, would have fewer alternative (erroneous) solutions before achieving the correct solution was not confirmed. The method chosen to evaluate the number of erroneous hypotheses is described in detail in the writer's dissertation (8).

It is interesting to note that the groups were very similar with respect to the number of trials required for solution of the problem. The means for the ulcer and control groups were 42.70 and 40.76, respectively.[4] If the number of trials necessary for solution is assumed to be the same for the two groups, it may not be readily apparent why there is no significant difference in the number of erroneous hypotheses if the ulcer group restructures the problem later. The reason is that the number of trials is not necessarily an accurate index of the number of hypotheses. Consider the following two patterns.

1. O O O O O O X O O O O O O O X
2. O O X O O O X O O O O O X

In the first instance there are two hypotheses whereas there are three hypotheses in the second case, despite a smaller number of trials.

D. *Minnesota Multiphasic Personality*

[4] The number of trials required for solution was the number of the X which preceded the 10 consecutive O's.

Inventory. The experiments just described were designed, in general, to elicit various manifestations of overt passivity. The MMPI was selected to test the hypothesis that ulcer patients in psychotherapy exhibit attitudinal counteraction. That is, statements of the ulcer patient's attitudes toward himself and the world can be utilized to demonstrate his denial of passivity as well as the discrepancy between his evaluation of himself and his actual behavior. Moreover, it was expected that the test could be used as a check on the validity of Ruesch's statements concerning the personality traits of ulcer patients in general.

Thirty MMPI's were obtained from each group. The profile and item analyses will be treated separately.

1. *Profile analysis*. One of the conclusions in the Ruesch study was the evidence of a capacity for repression in ulcer patients. The same study also noted that these patients cannot express aggression openly, and use social techniques for the express purpose of obtaining approval from others. All these characteristics typify the syndrome of hysteria.

The *first hypothesis* was that the ulcer group would be higher on the Hysteria (*Hy*) scale than the control group.

The Ruesch study stressed the emphasis on socially proper behavior in ulcer patients. Although the Psychopathic Deviate (*Pd*) scale on the MMPI is usually used to infer a certain disregard for social norms (by virtue of a high score on the scale), a low score on this scale can be interpreted as a high degree of social conformity.

The *second hypothesis* was that the ulcer group would be lower on the *Pd* scale than the control group.

Another conclusion of the Ruesch study was that ulcer patients adhere to an exaggerated lower-middle class value system. Such values would encompass approval of those interests and activities which are regarded in our culture as masculine and, conversely, would be nonsympathetic to those pursuits which have a feminine connotation (e.g., aesthetic interests).

The *third hypothesis* was that the ulcer group would be lower on the Masculinity-Femininity (*Mf*) scale than the control group.

The means and sigmas of the scores on all the test scales are presented in Table 2. All scores were *K* corrected. For the interpretation of *K*, the reader is referred to the article by Meehl and Hathaway (5).

The differences between the *Hy* and *Mf* means are both significant at the .01 level of confidence. The difference between the *Pd* means, although in the predicted direction, is not significant. None of the other scales, with the exception of Hypochondriasis (*Hs*), showed significant differences between the groups. The difference in the *Hs* means probably has no interpretive value for the present study. Patients with psychosomatic disorders were ex-

TABLE 2

MEANS AND SIGMAS OF SCORES ON THE MMPI SCALES FOR THE ULCER AND CONTROL GROUPS

MMPI Scale	Mean		Sigma		*t*
	Ulcer	Control	Ulcer	Control	
Hs	78.50	65.70	18.34	17.37	2.78
D	78.17	79.80	15.57	15.39	0.41
Hy	73.33	66.00	12.83	10.61	2.42
Pd	65.07	67.83	11.66	13.53	0.85
Mf	63.30	70.30	8.26	13.22	2.46
Pa	58.23	59.30	10.89	10.75	0.38
Pt	73.83	72.06	15.80	13.44	0.47
Sc	69.33	72.40	16.32	16.81	0.72
Ma	58.47	58.00	10.30	10.28	0.18

cluded from the control group and, for this reason alone, one would expect a smaller number of somatic complaints in the control group.

2 *Item analysis.* An item analysis was done on all of the 550 MMPI items. It was predicted that differentiating items would reveal the following cluster of attitudes to be typical of ulcer patients.

a. Psychological inadequacies are rigorously denied.

b. Femininity is denied and masculinity is exaggerated.

c. Masochistic, self-depreciating attitudes are denied.

d. Dependence is denied, but, at the same time, there is a disinclination toward self-assertion. One must be capable, but must not proclaim his individuality.

e. There is an emphasis on proper and conventional behavior in order to avoid censure from others.

f. An impunitive rather than intropunitive or extrapunitive attitude toward aggression exists. However, aggression is expressed when such aggression would be socially approved or would lead to a feeling of moral self-righteousness.

g. Moralistic and puritanical attitudes toward sex and religion prevail.

h. There is an extroverted, socially oriented "philosophy of life" in contrast to an introverted, introspective, ruminative attitude.

The first four attitudes refer to the ulcer patient's attitudinal counteraction. In general, these attitudes deal with the ulcer patient's perception of himself as active, efficient, and masculine. The denial of dependence had to be qualified because of those predictions that related to the ulcer patient's desire for social approval. If he manifested his denial of dependence by uninhibited self-assertion, he would be inviting social disapproval. The last four attitudes relate to the ulcer patient's exaggerated social orientation and his emphasis on cultural proprieties.

After the number of "true" and "false" responses to each item had been tabulated for the two groups, those items were selected which differentiated between the two groups at the .10 level of confidence. Of the 74 items which were selected in this manner, 44 were also significant at the .05 level.[5] The lenient .10 level of confidence was used in order to cull more items that would tap the characteristic attitudes of ulcer patients, at the risk of admitting some items that would be selected on the basis of chance alone. There were 10 additional significant items which dealt specifically with gastrointestinal disturbances or general physical health. Since the method of selecting the control group excluded both psychosomatic disorders and functional stomach complaints, these 10 items were not included.

For each attitude the writer has arbitrarily selected those significant items which seemed to be best subsumed under that attitude.[6] There is no claim that the choices of attitudes are necessarily the correct ones for the individual items. The only argument is that the items, when considered in their en-

[5] Seventy-four items represented 13.7 per cent of the 540 items (550 minus 10 somatic items). The difference of 3.7 per cent is 2.78 times the standard error of 10 per cent for 540 items. The difference is therefore significant at the .01 level of confidence.

[6] A minority of the items should properly be regarded as factual rather than attitudinal. However, even those items which pertain to the patient's overt behavior are valuable in evaluating his perception of himself.

tirety as they are answered by the ulcer group, fit into the personality structure that is suggested by the totality of these attitudes.

The number preceding each item refers to the number of the item in the MMPI booklet form. The letter following the item indicates whether the item was answered more frequently "true" or more frequently "false" by the ulcer group than by the control group.

a. Psychological inadequacies are rigorously denied.

79. My feelings are not easily hurt. (T)
84. These days I find it hard not to give up hope of amounting to something. (F)
100. I have met problems so full of possibilities that I have been unable to make up my mind about them. (F)
152. Most nights I go to sleep without thoughts or ideas bothering me. (T)
171. It makes me uncomfortable to put on a stunt at a party even when the others are doing the same sort of things. (F)
172. I frequently have to fight against showing that I am bashful. (F)
264. I am entirely self-confident. (T)
297. I wish I were not bothered by thoughts about sex. (F)
299. I think that I feel more intensely than most people do. (F)
301. Life is a strain for me much of the time. (F)
310. My sex life is satisfactory. (T)
328. I find it hard to keep my mind on a task or job. (F)
338. I have certainly had more than my share of things to worry about. (F)
366. Even when I am with people I feel lonely much of the time. (F)
384. I feel unable to tell anyone all about myself. (F)
389. My plans have frequently seemed so full of difficulties that I have had to give them up. (F)
396. Often, even though everything is going fine for me, I feel that I don't care about anything. (F)
397. I have sometimes felt that difficulties were piling up so high that I could not overcome them. (F)
416. It bothers me to have someone watch me at work even though I know I can do it well. (F)
487. I feel like giving up quickly when things go wrong. (F)
521. In a group of people I would not be embarrassed to be called upon to start a discussion or give an opinion about something I know well. (T)

b. Femininity is denied and masculinity is exaggerated.

74. I have often wished I were a girl. (F)
203. If I were a reporter I would very much like to report news of the theater. (F)
223. I very much like hunting. (T)
239. I have been disappointed in love. (F)
240. I never worry about my looks. (T)
283. If I were a reporter I would very much like to report sporting news. (T)
295. I liked "Alice in Wonderland" by Lewis Carroll. (F)
423. I like or have liked fishing very much. (T)
435. Usually I would prefer to work with women. (F)
441. I like tall women. (F)
513. I think Lincoln was greater than Washington. (F)
563. I like adventure stories better than romantic stories. (T)

c. Masochistic, self-depreciating attitudes are denied.

79. My feelings are not easily hurt. (T)
262. It does not bother me that I am not better looking. (T)
459. I have one or more bad habits which are so strong that it is no use in fighting against them. (F)

d. Dependence is denied, but, at the same time, there is a disinclination toward self-assertion. One must be capable, but must not proclaim his individuality.

165. I like to know some important people because it makes me feel important. (F)
212. My people treat me more like a child than a grown-up. (F)
224. My parents have often objected to the kind of people I went around with. (F)
235. I have been quite independent and free from family rule. (T)
239. I have been disappointed in love. (F)
245. My parents and family find more fault with me than they should. (F)
264. I am entirely self confident. (T)
400. If given the chance I could do some things that would be of great benefit to the world. (F)
415. If given the chance I would make a good leader of people. (F)
441. I like tall women. (F)

e. There is an emphasis on proper and conventional behavior in order to avoid censure from others.

49. It would be better if almost all laws were thrown away. (F)
93. I think most people would lie to get ahead. (F)
99. I like to go to parties and other affairs where there is lots of loud fun. (F)
215. I have used alcohol excessively. (F)
410. I would certainly enjoy beating a crook at his own game. (F)
437. It is all right to get around the law if you don't actually break it. (F)
460. I have used alcohol moderately (or not at all). (T)
485. When a man is with a woman he is usually thinking about things related to sex. (F)

f. An impunitive rather than intropunitive or extrapunitive attitude toward aggression exists. However, aggression is expressed when such aggression would be socially approved or would lead to a feeling of moral self-righteousness.

28. When someone does me a wrong I feel I should pay him back if I can, just for the principle of the thing. (T)
59. I have often had to take orders from someone who did not know as much as I did. (F)
93. I think most people would lie to get ahead. (F)
137. I believe that my home life is as pleasant as that of most people I know. (T)
157. I feel that I have often been punished without cause. (F)
212. My people treat me more like a child than a grown-up. (F)
224. My parents have often objected to the kind of people I went around with. (F)
245. My parents and family find more fault with me than they should. (F)
253. I can be friendly with people who do things which I consider wrong. (T)
277. At times I have been so entertained by the cleverness of a crook that I have hoped he would get by with it. (F)
380. When someone says silly or ignorant things about something I know about, I try to set him right. (T)
383. People often disappoint me. (F)
426. I have at times had to be rough with people who were rude or annoying. (T)
438. There are certain people whom I dislike so much that I am inwardly pleased when they are catching it for something they have done. (F)
469. I have often found people jealous of my good ideas, just because they had not thought of them first. (F)

g. Moralistic and puritanical attitudes toward sex and religion prevail.

37. I have never been in trouble because of my sex behavior. (T)
58. Everything is turning out just like the prophets of the Bible said it would. (T)
98. I believe in the second coming of Christ. (T)
133. I have never indulged in any unusual sex practices. (T)
258. I believe there is a God. (T)
297. I wish I were not bothered by thoughts about sex. (F)
378. I do not like to see women smoke. (T)
485. When a man is with a woman he is usually thinking about things related to sex. (F)

h. There is an extroverted, socially oriented "philosophy of life" in contrast to an introverted, introspective, ruminative attitude.

11. A person should try to understand his dreams and be guided by or take warning from them. (F)
152. Most nights I go to sleep without thoughts or ideas bothering me. (T)
207. I enjoy many different kinds of play and recreation. (T)
236. I brood a great deal. (F)
292. I am likely not to speak to people until they speak to me. (F)
366. Even when I am with people I feel lonely much of the time. (F)
384. I feel unable to tell anyone all about myself. (F)

Three items differentiated between the groups in a direction opposite to the predictions. They were:

132. I like collecting flowers or growing house plants.
452. I like to poke fun at people.
493. I prefer work which requires close attention to work which allows me to be careless.

The ulcer group answered the first two of these "false" less frequently than the control group did. The third item was answered "true" less frequently by the ulcer group. Despite the significance of these differences, the majority of the ulcer patients answered "false" to the first two of these items and "true" to the third one. Therefore, none of the 74 items was answered by the majority of

the ulcer patients in a manner that was inconsistent with the predictions.

It is possible, of course, that some of the items which emerged as significant are chance items. The only rejoinder which can be made is that all but three of the differentiating items are consonant with the nature of the predictions. It would appear, therefore, that at least a large majority of the discriminating items cannot be attributed to chance. The objection may then be raised that the interpretations of the items are not unequivocal. Verbal statements are, after all, often ambiguous and may lend themselves to diametrically opposed clinical interpretations. To overcome this objection, the predictions were given to three advanced graduate students in clinical psychology who were told to accept these statements as accurate descriptions of ulcer patients' attitudes. They were then asked to answer the 74 items "true" or "false" as an ulcer patient would answer them. These judges were colleagues of the writer in a VA installation, but knew nothing of the purpose and nature of the study inasmuch as the study had been conducted in a different installation. The disagreements between the majority of the ulcer patients' responses to these items and the judges' responses numbered 15, 8, and 7. The agreement between each judge and the ulcer patients was statistically significant beyond the .001 level of confidence as measured by chi square. The tetrachoric intercorrelations among judges were .72, .78, and .97. Substitution of the median correlation of .78 into the Spearman-Brown prophecy formula yields a reliability coefficient of .91.

None of the ulcer patients, as compared to seven in the control group, had *Mf* scores exceeding 80. Several patients in the control group were, or had been, overt homosexuals, and aesthetic interests in these patients would not be unexpected. The *Mf* scale is primarily an interest rather than a clinical scale, and although the scale does not always diagnose homosexuality effectively, it is true that homosexuals, because of their interests, usually score higher on this scale. As far as the writer was able to determine from the historical material at his disposal, none of the ulcer group was, or had been, an overt homosexual. Assuming this to be an accurate finding, its significance is difficult to evaluate. The writer does not know what the expected chance frequency of overt homosexuality would be if one selected 30 cases at random from the patient population of the San Francisco Mental Hygiene Clinic. The absence of homosexuality in the ulcer group could very well be attributed to chance. However, the finding is consistent with the theoretical formulation, i.e., ulcer patients deny feminine trends in themselves. It is also consistent to assume that their moralistic sexual attitudes would condemn such culturally deviant behavior as homosexuality.

VI. DISCUSSION

The present study raises as many questions as it answers. Considerable evidence has been offered that ulcer patients who enter psychotherapy in a Veterans Administration mental hygiene clinic tend, on the whole, to be overtly passive, at least when they are compared with nonulcer patients in psychotherapy. However, the results are generalizable only to ulcer patients in

psychotherapy from comparable socioeconomic backgrounds. One reason for presuming the present experimental sample to be overtly passive was its relatively low socioeconomic status. A sample of ulcer patients from a higher socioeconomic group should produce very different results. For example, one would hypothesize an extremely high level of aspiration for Alexander's sample (1, pp. 109-120) on the assumption that the Alexander group was derived from a higher socioeconomic level than the present sample. In view of Alexander's description of his ulcer patients, experimental verification of this hypothesis would certainly be expected. The Alexander group and the present group might not differ markedly on attitudes concerning the self, as measured by the MMPI, since both groups perceive themselves as active and efficient. However, opposite predictions would be made for the Alexander sample on all those measures which purport to measure overt passivity. The writer would argue that the familial background of these patients places greater emphasis on social mobility and tends to reward, rather than punish, that kind of active and assertive behavior which leads to success in our culture. This group, then, would be overtly as well as attitudinally counteractive. Limitations of time have prevented the procurement of such a group and so, for the present, the lack of data relegates any statements about these patients to the realm of untested, albeit tenable, hypotheses.

Another conspicuous omission in the present study is the absence of data on other psychosomatic groups. The differences between ulcer patients in therapy and nonpsychosomatic patients in therapy have been fairly well substantiated, but the possibility remains open that the differences are not so much attributable to the existence in the experimental group of ulcers, *qua* ulcers, as they are to the presence of a fairly general psychosomatic type.

Nevertheless, the results of this exploratory study are encouraging. The obtained differences between the groups provide some justification for regarding ulcer patients in psychotherapy as having psychiatric problems distinct from those of nonpsychosomatic patients in psychotherapy.

VII. SUMMARY AND CONCLUSIONS

The present study was designed to compare the personality structures of ulcer patients in psychotherapy and neurotic patients in psychotherapy.

A review of the literature pointed to two fairly specific ulcer personality types: an attitudinally counteractive, overtly passive type and an attitudinally counteractive, overtly active type. A rationale was presented for considering the ulcer patients in this study as attitudinally counteractive and overtly passive.

The ulcer group consisted of 34 male World War II veterans in psychotherapy with a medically confirmed diagnosis of a gastric or duodenal ulcer. The control group consisted of 38 nonpsychosomatic, nonpsychotic male World War II veterans who were also in psychotherapy. The groups were roughly equated for severity of psychopathology, length of time in psychotherapy, ethnic origin, intelligence, and socioeconomic status. The groups differed significantly with respect to age, but this variable did

not correlate significantly with any of the experimental measures. The theoretical formulation of the ulcer personality led to specific hypotheses, which were tested by four measurements:

1. *Level-of-aspiration experiment.* The experimental task utilized performance on a pursuit rotor. Responses which represented a raising of one's goal after failure or a refusal to lower one's goal after failure were considered as atypical responses indicative of a high level of aspiration, and responses which involved a lowering of one's goal after success or a refusal to raise one's goal after success were considered as atypical responses indicative of a low level of aspiration.

The hypothesis was formulated that the ulcer group would have a lower level of aspiration than the control group when the level of aspiration was measured by the difference between the number of atypical high responses and the number of atypical low responses.

The results verified the hypothesis at the .05 level of confidence.

2. *Experiment on memory for completed versus interrupted tasks.* The experimental material consisted of 16 pencil-and-paper tasks. Half of the tasks were interrupted before completion.

The hypothesis was formulated that the number of completed tasks recalled relative to the number of incompleted tasks recalled would be greater for the ulcer group than for the control group.

The results verified the hypothesis at the .01 level of confidence.

3. *Experiment on perseveration of inadequate hypotheses.* Each patient was exposed to a learning problem with randomly distributed reinforcements for half of the first 24 trials, following which no more reinforcement trials were given. Two hypotheses were formulated:

a. The first hypothesis was that the ulcer group would require a greater number of trials to restructure the problem than the control group. The results verified the hypothesis at the .05 level of confidence.

b. The second hypothesis was that, after the problem had been restructured, the ulcer group would follow a smaller number of erroneous hypotheses before achieving the correct solution than the control group. The results did not verify the hypothesis.

4. *The Minnesota Multiphasic Personality Inventory.* On this test the hypotheses were formulated that the ulcer group would score higher on the Hysteria scale and lower on the Masculinity-Femininity and Psychopathic Deviate scales than the control group.

The results verified the hypotheses on the Hysteria and Masculinity-Femininity scales at the .01 level of confidence. The hypothesis that the ulcer group would score lower on the Psychopathic Deviate scale was not verified.

An item analysis confirmed the hypothesis that the ulcer patients in this study, despite their overt passivity, perceive themselves as active, masculine, and efficient, to an extent greater than in the control group. The item analysis also demonstrated that these patients are, on the average, conforming, moralistic, impunitive, and socially rather than introspectively oriented.

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